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ABSTRACT

An administrator's daily life is full of decisions that often involve an "on the spot" solution. This paper discusses some of the principles involved in drawing inferences in research and decision making, and describes how a knowledge of decision-making errors can help administrators. The paper also describes a case study that illustrates common judgment errors that were made during one junior high school's transition to a middle school. The district superintendent had decided to change the school philosophy and practice to one consistent with the interdisciplinary teacher teams outlined in "Caught in the Middle." The paper describes the inferences and decision-making processes through which faculty and staff created a common preparatory period for all teacher teams. (LMI)

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Decision Making - A Leadership Model

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Decision making is a process by which a person, group, or organization identifies a choice or judgment to be made, gathers and evaluates information about alternatives, and selects from among the alternatives (Carroll,J. & Johnson, E.,1990). An administrator's daily life is full of decisions that often involve an "on the spot" solution. An understanding of the process of decision making can provide a site or district administrator with tools and a knowledge base to assist in important tasks that often must occur in response to a particular situation.

It is not easy to break up a stream of thoughts and behaviors into units called "decisions". To cut through this complexity of task analysis, a consistent and coherent map is necessary to understand the nature of the temporal stages of decision making and its components and decision making. Much research has been done in this area outlining the errors that are made in the process of making a decision. Senge (1990) writes that we have always put our faith in trial and error. He details the delusion of relying on the past that often forces us often to try to solve the same problems over and over again. The knowledge of the existence of this delusion can be helpful in the process of arriving at decisions, searching not to repeat past errors. The knowledge of additional research involving recent theories of decision making can be helpful to administrators as they conduct their daily business in site and central offices. Simply, administration is about thinking, and administrators solve problems and make decisions. In doing so, they must draw inferences or make judgments.

Cognitive psychologists tell us that most people, including administrators, use some questionable shortcuts in making judgments. In most instances, the mistakes that result are unimportant. However, in the case of administrators, the consequences can be serious, because

administrators make some decisions that affect the lives of others in important ways. Nisbett & Ross (1980), in their book, Human Inference, discuss decision making and the assumptions that accompany it. The purpose of this paper is to discuss some of the principles of drawing inferences in research and decision making outlined by researchers that include Nisbett and Ross, using their argument as a focus, and to discover how a knowledge of these errors can be of assistance in the life of an administrator. These principles will first be discussed and will be followed with a case study example demonstrating assumptions and errors in judgment that are typically made in the act of making decisions.

When we make decisions, there are two perspectives from which we may observe the results. The first is descriptive; it includes how human beings typically make judgments. The second perspective examines how human being should make judgments. The only acceptable answer to the question, "How did you arrive at that decision?", that reflects this philosophy is "I reasoned it".

Human beings have a working knowledge that includes tools to make their decisions. One of these tools is known as a knowledge structure. The knowledge structure consists of the informal theories we compile as a result of life's experiences. (Theories of Actions). We can screen our information, frame it, and make sense of the world. It is additionally, context specific. The second tool that humans utilize is that of heuristics. Heuristics are the general rules that we apply to sort through things. They help us decide what we should attend to. There are two major types, the availability heuristic and the representativeness heuristic. The availability heuristic tells us to pay special attention to those things that are available to us, or immediate. We often inflate the frequency based on personal experience that is immediate and

available to us, overgeneralizing from something that is immediate to us (Nisbett & Ross, 1980).

This theory next calls into question, how do heuristics guide our judgment? The availability heuristic tells us to pay special attention to those things that are available. There is a tendency toward causation, to assume that something in fact causes something else. This is often a leap that may not be valid. A simple daily example of this is that a particular mailperson's inefficiency is the cause of the mail being late. The cause may in fact be another factor altogether, but humans draw on that which is available to us from past experience. Another error that can be made in this area is called the fundamental attribution error - when we assume particular characteristics of individuals define their behavior and who they are. Senge (1990) discusses this error represented through a type of discourse. He says that individuals generally wish to have their point of view prevail, and that " a sustained emphasis on winning is not compatible with giving first priority to coherence and truth"(p.240). Often the fundamental attribution error is made in the interest of "winning", and thought "presents" itself (stands in front) and challenges our answers. Senge suggests here that dialogue with others helps individuals to see the representative and participatory nature of thought. He asks leaders to become more sensitive to this. This sensitivity, he suggests can promote an acknowledgment of the incoherence in our thought. In dialogue, he pursues, "people become observers of their own thinking". Administrators, in a transformational format need to become "observers of their own thinking". Senge asserts that dialogue with others helps put what are often incorrect assumptions aside.

The representative heuristic guides us to want to categorize. It points to the tendency to

categorize and look for similarities. When we put things into categories we simplify our world, enabling us to make quicker judgments. As we begin to categorize, we create knowledge structures. One example might include racial stereotyping as a limitation of the representativeness heuristic. This heuristic gives the individual a tool for influencing others judgments based on this. It can effect frequencies (inflated), as previously stated, and it can be defined as causal as well (Nisbett & Ross, 1980).

According to Nisbett & Ross (1980), in the decision making process, when we make inferences, we go through each of these steps : description, covariation, causal explanation, prediction, and finally theory testing. (See Exhibits A & B). Doing this, we often ignore base rates (frequencies) and often misjudge our information.

What kind of knowledge structures do we have? The first is schema, the building blocks of the mind. It refers to the relationships that we make between objects - i.e. boats, water. There are two basic types of schema, scripts and personae. Scripts are how we think of events unfolding. An example of this is depicted in our expectations of the behavior of others. The concept of personae is defined when individuals refer to classes of people - not removed from a stereotype. The difficulty with knowledge structures is that individuals have trouble seeing people in other roles. An example of this is the way the "outside" world views teachers. They misapply when they filter out those things that they don't expect, or they fill in other things (a teacher at the beach is often a surprise to a child, or even to a parent who only sees them in the context of school and does not have a reference point outside of that environment). Vividness is called on in this area and is a powerful effect. Three things that effect how vivid something is perceived to be are: emotion, concreteness (the more real something is, the more vivid) and

EXHIBIT A

DATA SAMPLE | COVARIATION | CAUSALITY | PREDICTION | THEORY

Screens Data

MAINTENANCE/

CHANGE

Heuristics

Available — Knowledge — If A then B
(Hydraulic explanation)

(personalization/case study)

Base Rates

Regression

Representative

(stereotypes)

distinct

consistent

consensus

KNOWLEDGE STRUCTURE

Theory — Sampling

Scripts — SAMPLE SIZE

Personae — POPULATION

WHOLE PERSON

FUNDAMENTAL ATTRIBUTION

FALLACY ERROR

A - B Linked — B Causes A

Human need to attribute causality

EXHIBIT B

Data Sample	Covariation	Causality	Prediction	Theory Maintenance/ Change

VIVIDNESS

CONCRETENESS **BIAS** **FUNDAMENTAL ATTRIBUTION FALLACY ERROR**

PROXIMITY

EMOTIONAL

FUNDAMENTAL ATTRIBUTION ERROR - WE FOCUS ON CAUSES THAT SEEM TO BE AVAILABLE, IN CLOSE TEMPORAL AND SPACIAL PROXIMITY, AND RESEMBLE WHAT WE PERCEIVE THE OUTCOME TO BE. WE ATTRIBUTE A CAUSE THAT SEEMS TO RESEMBLE THE EFFECT.

proximity (temporal, spatial). If we pay attention to more vivid things, we tend to weight them more than other factors in making a decision (Nisbett & Ross, 1980).

There are four steps in the judgment of a relationship between things. The first step is to assess the covariation - whether two things are related. An example of this might be that more vitamin C might result in less illness, possessing a negative relationship. Next, we need to assess whether one causes another, and the tendency to do this is almost automatic. The next step in this process is to predict: if we do x, then y will happen or next time, if I do x, y will happen. Finally, we start to develop a theory based on the previous results. Once a theory is created, it is difficult to change. Theories were developed as shortcuts. We don't have to look at other evidence when we have one. Theories are built to let in consistent information and ignore those things that don't seem salient, thus more subtle forms of data are easily ignored. Theories, once invoked are self-reinforcing. We create information that fits and only change our minds when it is a fairly peripheral decision or we are overwhelmed by brute force or if the information (not the evidence) is very vivid. Also, according to the Kuhnian paradigm (Kuhn, 1962), when you have a theory that is opposite from that which is generally accepted, and it will handle the paradigm better and you can account for the movement, you then can change your theory.

Warren Bennis (1989) discusses mistakes that are made in theory as important in Becoming A Leader. He states that "leaders are those who have proved the necessity and the efficacy of self-confidence, vision, virtue, plain guts, and reliance on the blessed impulse. They have learned everything, but they have learned more from experience, and even more from adversity and mistakes. And they have learned to lead by leading" (p.111). The major point

that is made from this is that an awareness of what mistakes are made, and how to avoid them, can provide an extra "edge" that a leader needs.

CASE STUDY

A case study which is illustrative of the errors made in judgment follows. Its purpose is to describe and analyze a decision that was made as a part of the change of a school from a junior high to a middle school, in philosophy and practice. This school functioned as a "little high school" previous to the change. This was translated into a school that was completely tracked and accompanied by individualized departments. The reform involved changing from its present organizational and curricular structure to an interdisciplinary middle school with teams. This was somewhat of a translation of what the California task force report -"Caught In The Middle " suggested as an effective middle school environment for children. The administrative decision that will be broken into component parts is a major decision that was made in the process of developing the teams to produce an interdisciplinary middle school. This was the decision to have a common preparatory period for all team members. This case study will first describe the events that led up to this decision and then discuss the inferences that were made in the process.

BACKGROUND

The school that will be described is De Anza Junior High School (later renamed De Anza Middle School), located in the Ontario-Montclair Elementary School District. The decision to change the school in philosophy and in practice was made by the Assistant Superintendent in the school district. He conveyed this information and its particulars in a meeting with the principal

of the school and myself. During the meeting he discussed the particulars of implementation of the process. One of the areas that he emphasized included the fact that the implementation was to take place during the following school year. (It was the spring of the year.) As the first step in the process, a staff meeting was held. During the meeting the principal explained to all of the teachers on the staff what was to happen and why, and I explained the interdisciplinary process, took questions, and passed out copies of "Caught In The Middle". The principal simply stated that it would be implemented fully the following year. The change entailed changing the school from a fully tracked school with levels of classes (GATE, Algebra, Remedial, etc.) to an school with academic teams of teachers, teaching in the areas of Math, Science, Social Studies and English that would share the same students all day (approximately 150) in heterogeneously grouped classes. This change was a departure from what this staff had known, in some cases, for the last twenty-five years. The staff was then told that there would be workshops on teaming and release time for those individuals who were interested.

Many staff members attended inservices and workshops and visited school sites that were involved with teaming. The staff observed at later meetings that many of the schools were implementing interdisciplinary teaming gradually and asked for a pilot program. (There were several staff members willing to do this, and many that were negative.) The principal denied the staff's request, explaining that the school was to go to full teaming by the following year, but that he would provide them with as much help as possible.

Next, a faculty meeting was held to discuss the process of the change taking place at the school. At this meeting, after a lot of discussion and questions, staff members were asked to fill out a questionnaire that included questions concerning with whom they would like to team (and

with whom they did not want to team) and what subjects they wanted and were qualified to teach.

As the next step in the process, the data from the questionnaires was compiled and a chart was made that represented the thoughts and desires of the faculty members. This was shared with the principal. It was at this point that the specific decision process began to bring about the formation of each of the interdisciplinary teams.

The first decision was one of numbers. Our school had a population of 900, which divided evenly into six teams of 150 each.

The next decision was a major one and represented a philosophical stance. It was to designate two of the teams (one seventh grade and one eighth grade) English Second Language Teams. The Bilingual Department, the Assistant Superintendent of Administration and the Assistant Superintendent of Personnel were consulted in a meeting that was held by the principal and myself to insure that there was district support for these designations. Considered as major factors in these discussions were the legal guidelines for a Bilingual program. The decision was reached that the students could be together until they obtained the language skills necessary and then could be gradually introduced to the mainstream. Considered in this decision were the actual numbers of ESL students present on the campus, the particular skill levels of the students that were present and projected for the following school year, and the staff requirement that would be necessary for this to be implemented. Also considered were the legal requirements for providing primary language skills and the need to address and implement this requirement while not "tracking" a group of students all day. It was decided that the team would be multiple language levels, allowing for student movement as necessary. Additionally, the students would take their elective and physical education in the mainstream with all of the

students on campus.

Next, the subjects that needed to be addressed both inside and outside of the team structure were examined. It was decided that we would address English, Social Studies, Science and Mathematics within the team, for the two reasons that they could be more simply taught in a cross-curricular fashion than the electives or physical education and that they represented the "academic" realm of the school. Also, the document "Caught In The Middle" seemed to address these domains. The principal expressed in several conversations with me that he felt that the process of change within this school should be a reflection of this document. We felt that within this structure, if a child was having difficulty in the academic subjects, he/she would have a common core of instructors to accommodate meetings with parents, students, assemblies, etc. to communicate more readily in general. This was additionally the district recommendation for the implementation of an interdisciplinary teamed school.

The next major decision that was reached, and one that will be analyzed in detail, was the decision to give common preparatory periods to each of the interdisciplinary teams. This was also suggested in the "Caught In The Middle" Report. It was felt that if we were to implement this teaming concept successfully, that our school site also needed to adopt the common preparatory periods. A "rough draft" that included a detailed list of all of the areas that might be impacted by the decision and how any problems could be overcome was put into motion. This draft additionally addressed each of the proposed six teams and demonstrated in detail how common preparatory periods could work numerically as well as in actual practice.. An additional point of importance was that all of the faculty indicated on their questionnaires that they were in favor of common prep periods. Therefore, this was considered to be a positive

decision at the time for the majority.

In addition to this, a list was made of leaders in the school by subject area and tentatively assigned each to a team. A number of the faculty had indicated a desire to fill a leadership position. Also, several teachers had mentioned that they would like to work on an team with a certain individual as the leader. We compiled the data and considered it, looking for logical patterns. Then, we next made a list of "followers" in the school by subject area using the same process that had been utilized to obtain the list of potential leaders, also looking at the areas of who "fit" with whom as the third step in the process. The data that were consulted for this consultative model for this decision were as follows: 1) A teacher survey consisting of 43 questionnaires that was a representative sociogram asking for input of teachers regarding personal preferences for leadership, or who they would be willing to work with as a leader on a team; 2) Administrator directed teacher interviews of individuals recommended to be team leaders. (These were also individuals that the administrators believed would be good leaders); 3) District documents proving verification that an individual in leadership could teach in one of the areas indicated for the interdisciplinary teams. (Math, Science, Social Studies and English); 4) The final piece of this decision involved using information concerning the potential leaders using past practice information with regard to involvement and school leadership activities.

A decision regarding the placement of a leader in each team was finally made. The next step was to determine the make up of each of the teams. Components were examined as follows: 1) Not putting two negative people on the same team; 2) Looking for as good a "match" as possible of integrative personalities; 3) Looking for areas of strength (and weakness) in a

team; and 4) Examining areas of faculty expertise. The same process was used to arrive at this decision as had been used for the previous ones: documents, interviews, and analysis.

Finally, the decision was presented to the faculty that May to be implemented the following school year. There was some discussion and the negative individuals that were present at the first meeting mostly had not changed their viewpoints. They were given a forum within the structure of a staff meeting for their complaints .

The following summer the teams met to organize their team structure and plan and discuss curricular interests. The following fall the leaders of all of the teams met to discuss additional curricular and team issues and coordination.

ANALYSIS

Many decisions were made to achieve a "middle school philosophy" and interdisciplinary teams for this school. It was an interesting and challenging time during the entire process. The majority of the decisions that were made were carried out as administrators must, addressing the immediacy of the problem and then following through. In this model, the issue was right in front of the administrators and based on what they believe to be their "best" knowledge, they made a decision that they honestly believed wass the best one considering the circumstances. During this process many of the decisions could be called "forced" decisions. They were made and carried out because of a district mandate. The way in which they were carried out remains the issue that can be analyzed.

In this part of the paper, the decision to give common preparatory periods to each of the teams will be the focus, complete with the examination of the component parts of the decision.

The decision to have common preparatory periods for interdisciplinary team members was based on an availability heuristic. Much of the information previously viewed in the form of documents, visitations to school sites, and other experiences at school sites visited had included primarily positive feedback regarding common preparatory periods. In fact, I could not remember any negatives concerning this. In retrospect, a researcher with time might have enlarged the sample to include any problematic situations. That described time is a luxury in the real world, and was also a luxury at the time the information was being gathered. Armed with this available and vivid information, the next task was to effectively convince the principal that there was a covariance between common preparatory periods for teams and better teaching and increased academic achievement of the students. To accomplish this, the other data was retreived from the set that he recognized. Data discussed was that which was gathered during the visits of our eight instructors to five other schools. The principal and counselor also accompanied the instructors to these school sites, so this was shared information. During the visits, all schools were examined, with the team exploring specific assigned areas, and asking a lot of questions. In all, we talked to between ten and twelve teachers at each school site, members of the "leadership" team, and at least one administrator at each site. In all five schools, our team of 8 + 2 received a 100% positive response in all circumstances to the necessity of forming common preparatory periods for all interdisciplinary teams. This reinforced our inference of common preparatory periods and better teaching. The schools we visited all said it was so. They also produced test scores of students previous to adopting the common prep periods for interdisciplinary teams and compared them with two years of increased scores since the teaming process began. Even though the sample of schools visited was

small (eight) and decisions reached reflected the inferences of only 10 staff members (administrative and instructive positions) our team reached consensus that this would be a positive move for our school. We all agreed that common preparatory periods would be a good move for the school at this time. The team also had in common the data from "Caught in the Middle" report, that advocated common prep periods as a determinant of success in all cases.

Even though the data represented 100% agreement from all of the visited school sites, the one factor that hadn't been taken in consideration was the difference in the socioeconomic area of all of the schools. Two of the five were situated in upper middle class communities, while De Anza reflected a community that was clearly between low and middle class, with an emphasis on the lower socioeconomic scale. The other three, however, were similar in location and demographics to our school. De Anza is located in the south end of Ontario, in the barrio, and the students come from a variety of communities to attend this school. Therefore, when the team was examining test scores at other school sites, it did not consider this factor, and it simply never surfaced as a concern. We just assumed it would apply in our community as well. The data that led us to believe this was that there was 100% agreement among all schools concerning the necessity of implementing common prep periods, regardless of school location.

These inferences of covariance led to several others that follow. The covariation assumed between common preparatory periods and good teaching and increased academic achievement for students that was based on the data described above, led to a causal inference between the described elements. The team at De Anza believed that common preparatory periods for teachers

on interdisciplinary teams could lead to good teaching and increased academic achievement. They felt they this had been demonstrated to them on the basis of their compiled data. This team of instructors that had visited other school sites reported to the staff at several faculty meetings, and the majority of the staff (about 80%) did agree verbally and state that this made sense. Based on this causal inference, the next step was to predict that there would be increased academic achievement and better teaching as a result of this practice. Thus, the theory that better teaching and better achievement was maintained for the present, with the possibility being allowed for the alteration in the future, to allow for a change factor.

There were many component parts of this decision as well as other inferences that were made. They are listed as follows:

The inference was made that collaborative planning would lead to shared information and this was based on a working theory. The theory was based on both a knowledge structure that was context specific that if groups are allowed to plan in a collaborative setting that information would be shared among the individuals in the planning set. It was also drawn from an availability heuristic that inferred that since like groups in the schools visited were sharing information as a result of collaborative planning that information would be similarly shared in the collaborative groups at this school site. This might have been a place where the information was solid, based on the shared information, if not for the fact that two of the school sites differed dramatically in socioeconomic and demographic structure from our school site. This was possibly a point of departure in the decision, as it overgeneralized based on the availability heuristic, not accounting for the particulars in this school site. A representativeness heuristic was also employed, tending to categorize and only look for similarities between this case and

those of the other school sites (the socioeconomic and demographic influence was not thought of or considered). The data sample consulted was again the schools visited by the teachers and administrators, and the positive responses emanated by those that visited the school sites. Another problem that was not recognized with this sample from the schools was that it represented the behavior of the more positive individuals on each of the school sites. Another factor that emerged through the school visitations was that as a result of the common preparatory periods given each team, the faculty adamantly and positively responded that this led to more collaborative time for the teams and better teaching. This was corroborated by the site administrators through teacher evaluation as well. In the next step the team assumed a covariation between collaborative planning and better teaching. This was based on the information so far acquired. Once assumed, the next leap involved implication of causality that A causes B, or collaborative planning causes better teaching, predicting that this is what will happen in the future through the collaborative planning of teachers on a common prep period. This theory is then invoked, and only subject to change if the results of the shared collaborative planning time do not lead to better teaching.

The inferences that were additionally made were all derived from the previously mentioned sample and data, so therefore it is unnecessary at this juncture to repeat it in each instance.

Inference: Shared information would lead to more counseling of students. This inference was again implying that teachers would, after sharing information among the team members, either counsel the students more as a team or make any necessary referrals to the counseling

center. This theory was invoked initially through representativeness (the teachers, counselor, and principal all knew of other specific examples where this principle seemed to apply and the results of these examples additionally corroborated from the data derived from the school sites visited. We assumed that because this principle was working in other sites that we remembered or were vividly present in our memories from our visitation that this would be representative of this staff as well). This conclusion did not include any samples of past behavior of the De Anza staff. Covariation was assumed between the shared information and the increased counseling of students, implying that one in fact was a causal factor of the other, predicting that this is what would happen in the future as information was shared.

Inference: The counseling of students would lead to better behavior. This inference was gleaned from the invoking of a theory, and no real data set. This theory was invoked through available information from all of the members of the De Anza "team". It consisted of a belief structure derived from past experience, specifically recalled situations during which: 1) a student behavior problem occurred; 2) counseling followed; 3) behavior improved. Although there was no formal screening of a data set in the development of this theory, the conclusion seemed logical to all as they had remembered specific instances where this theory applied. The team therefore felt that their commonly held theory was being applied appropriately, and assumed that based on this information that there was a covariance between counseling and better behavior for students. The vivid examples called on by each member of the team upon implied to each that these factors were causal. The team believed that increased counseling would lead to better behavior based on their past experiences which were vivid in their minds. The prediction became that if counseling was increased, better behavior would follow.

Inference: The better behavior of students would lead to higher achievement for students. This inference was arrived at through a knowledge base and a look at personae. The teachers believed from past experiences that better behaved students in their classes had greater achievement in their classes than those who were less well behaved. They found the inverse of the principle to be most vivid in their minds. Specifically, when students misbehaved, they generally did very poorly. This possibly led to the team screening out data that could have been obtained from the current school site. It simply wasn't considered. The other factor that wasn't considered was that the data obtained from the school visitations included scores of students that were not representative of the population of De Anza Middle School, at least in two cases. Most of the teachers and administrators drew on availability and representative heuristics that led to this same conclusion, that better behavior resulted in higher achievement. Therefore, the data set was most probably that of students at both ends of the spectrum that they most vividly remembered. Based on some of this reasoning which was faulty in areas discussed, the staff assumed covariation between behavior and higher achievement, and implied causality predicting a positive outcome and reinforcing and maintaining the current theory.

Inference: The opportunity to communicate more with parents would lead to a higher achievement level for students. The instructors examined past experiences and invoked representativeness at this juncture. Although this was additionally a factor of the data obtained from the visited school sites, teachers remembered that in their experience, students who had parents that communicated with teachers generally did better than those students whose parents did not communicate with the school. This theory was not the same as the inference, and was therefore faulty. The inference that was invoked was that if the opportunity was present to

communicate with parents, that they would come. It also called on representativeness allowing a "high hopes" theory that if the communication process takes place with parents, that it will lead to more time that the parents spend with their children, more homework time and with the resultant outcome being higher achievement.

The logic in this inference was faulty because even if the opportunity was supplied to communicate with parents, it does not always follow that they would be available for conferences, or even be interested. This inference was faulty for several reasons, but was additionally not based on any hard data. It was another example that illustrated what the individuals inferring this believed. They assumed that these characteristics could also be given to other. It was inferred that the opportunity to communicate more with parents would covary with a higher level of achievement for students, and drawing on that representative belief, a causal inference and prediction for the future was drawn. This theory could only be tested by the invoking of the time period that would allow the opportunity to communicate more with parents, and then testing the resultant data searching for a correlation between that factor and any increased achievement of the students.

Inference: The opportunity to communicate more with students would lead to better behavior. Each member of the team had exhibited a belief structure regarding the probable (in their minds) result of this communication with the students. They had a plan. They openly discussed in group and staff meetings that as a team that they would meet during their prep periods to discuss concerns with individual students. This implied a "gang up" effect, that the student would be surrounded by his four academic teachers who would examine patterns of behavior and search for solutions together. The team also felt that this opportunity to

communicate more with students could lead to more time for positive interventions and reward. They described assemblies where team individuals could be awarded for academics and behavior. With this information they implied that students would be better behaved if this opportunity was provided. Data that was possibly screened out included communications with students who fell into the "incorrigible" range. These students simply did not care, no matter what one did. The teachers were being very positive at this juncture, and did not consider any negative data that may have existed concerning students with past behavior problems. This inference drew on representativeness and availability and therefore limited samples to individuals that had been counseled and therefore behaved better. It assumed a covariation between the opportunity to communicate more with students and better behavior, implying causality, leading to the prediction that this would take place. Again, the theory was maintained, and only would be subject to test once this opportunity to communicate more with students was implemented.

Inference: The opportunity to meet with students could lead to self esteem issues being addressed individually and with groups, hence better behavior. This inference was made as representative of the sample of schools visited. At the sites visited the common prep time was utilized to address the self esteem of individuals and groups through planned interaction. The statement made by the individuals at the visited school sites was that better behavior was related to a more positive self esteem, and that therefore the result was better behavior in their classrooms. This was the reasoning that they used for the implementation of the program to improve the self esteem of students. Drawing on this sample the administration assumed that since the team members had seen the self esteem activities at other sites successfully implemented and addressed during their common planning period that this would apply to our

school site as well. All involved assumed that there was a covariation between the time to meet with students and better behavior, as implicated through positive self-esteem talks. This led the entire team to a belief system that was in the making in the planning stages of the teams at our site. The teachers at our site began to plan for these activities and the administrative staff sought out self-esteem building activities to assist the teams in the development of this principle within their team. This was a "win-win" for the administrators, there were no negatives that were considered.

FOLLOW-UP

The initial premise that common preparatory periods would be good for the staff at De Anza Middle School turned out to be a sound one, based on the events that followed. Teachers on all teams planned well (some in more detail than others) and presented the curricular and innovative social plans that would be a direct result of the time that was given for them to meet together in a common time period. These plans were given to the administrative staff at the beginning of the following year. The teams utilized the information and examples that their leaders had been given during the visitation and analysis process, responding extremely creatively with assemblies and projects for the students that provided group identification. For the teams that really took this seriously, the teachers reported that there had been a decrease in behavior problems due to the fact that all of the team members were able to communicate regularly and often solve a problem before it became huge. The staff's morale was generally higher the following year, and each team adopted a name that became its identity for the students. There became a gentle atmosphere of academic competitiveness between the teams. All in all, this decision was felt by all staff members (as surveyed at the end of the year) to be a good one, and one that they wanted to keep the following year.

Conclusion

A knowledge of the best problem-solving techniques is imperative in the life of the administrator. Research indicates that administrators that are taught and exposed to the myriad of problem solving techniques are better able to solve the swampy administrative problems than they could before exposure to these techniques (Leithwood, K. & Steinback, R., 1995). While administrators may not, in their daily life have the luxury of time to analyze a decision according to the components described, knowledge frees them from the "error principle", the tendency of humans to make errors in judgment. The rules of pure scientific inquiry provide only a rough and approximate guide to lay inferential strategy, and it will sometimes be more appropriate to set them aside in favor of procedures that facilitate action or better serve immediate goals. Decisions of little consequence generally will, and should, be guided by intuitive strategies. At the other extreme, recurrent decisions with important consequences generally should be made with the aid of the best normative strategies available. The varied immediate role of the school administrator demands a thorough knowledge of these strategies.

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